

REMARKS

Claims 1-13, 40 and 41 are pending. Claims 6 and 9-13 are withdrawn from consideration as being drawn to a non-elected Species. Rejoinder of claims 1-13, 40 and 41 is respectfully requested. By this Amendment, claims 14-39 are cancelled without prejudice to or disclaimer of the subject matter contained therein, and claims 1, 2, 4 and 5 are amended. Claims 1, 2 and 4 are amended to recite features supported in the specification on page 17, line 22 – page 18, line 15. Claim 5 is amended to correct antecedent basis. No new matter is added by any of these amendments.

Reconsideration based on the following remarks is respectfully requested.

I. Amendment Entry after Final Rejection

Entry of this amendment is proper under 37 CFR §1.116 because the amendments: a) place the application in condition for allowance (for all the reasons discussed herein); b) do not raise any new issues requiring further search or consideration; c) place the application in better condition for appeal (if necessary); and d) address formal requirements of the Final Rejection and preceding Office Action.

The foregoing amendments do not raise any new issues after Final Rejection. Instead, the amendments address rejections not related to prior art rejections. Therefore, entry of the amendments is proper under 37 CFR §1.116 because the amendments place the application in condition for allowance. Accordingly, Applicant respectfully requests entry of this Amendment.

II. Non-Elected Claims 6 and 9-13 Should Be Rejoined

Claims 6 and 9-39 are drawn to a non-elected invention. Claims 14-39 are cancelled. Applicant respectfully requests rejoinder of claims 1-13, 40 and 41. Claim 6 is included in the prior art rejection, and therefore should be included with the claims in Group I, Species I. Claims 9-11 depend from claim 8, and claims 12 and 13 depend from claim 1. Therefore claims 9-13 should be also included with the claims in Group I, Species I.

III. Claim 3 Satisfies the Requirements under 35 U.S.C. §112, first paragraph

The Final Office Action rejects claim 3 under 35 U.S.C. §112, first paragraph, as being nonenabling. In particular, the Final Office Action asks how the third surface of the first substrate and the second surface of the second substrate can be disposed to oppose each other. This rejection is respectfully traversed.

As shown in Fig. 1, the first substrate 10 includes an interconnect pattern 12 on the top side that represents the first surface and an adhesive 16 on the bottom side that represents the third surface. The second substrate 20 includes an interconnect pattern 22 on the top side that represents the second surface. The first substrate 10 can be mounted on the third surface to the second substrate 20 on the second surface, as shown in Fig. 2, with these two surfaces opposing each other. See also the specification at page 17, lines 22-25 and page 20, line 25 – page 21, line 3. Withdrawal of the rejection under 35 U.S.C. §112, first paragraph is respectfully requested.

IV. The Claims Satisfy the Requirements under 35 U.S.C. §112, second paragraph

The Final Office Action rejects claims 1, 2, 4, 7, 8, 40 and 41 under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the Final Office Action asserts that essential structural cooperative relationships of elements are omitted, and in particular the electrical connection or adherence between the first and second substrates. Claims 1, 2 and 4 have been amended to obviate this rejection. Withdrawal of the rejection under 35 U.S.C. §112, second paragraph is respectfully requested.

V. Claims 1-8, 40 and 41 Define Patentable Subject Matter

The Final Office Action rejects claims 1-8, 40 and 41 under 35 U.S.C. §103(a) over U.S. Patent 5,239,448 to Perkins *et al.* (Perkins) in view of U.S. Patent 4,817,280 to Ozaki. This rejection is respectfully traversed.

Neither Perkins nor Ozaki, alone or in combination, teaches or suggests an interconnect substrate including a first substrate on which a first interconnect pattern is

formed, and a second substrate on which a second interconnect pattern is formed, wherein the first and second substrates are disposed to overlap each other but not to be in direct contact with each other, at least one of the first interconnect pattern and the second interconnect pattern has a mounting region for an electronic chip, and the first interconnect pattern and the second interconnect pattern are electrically connected by a conductive material therebetween, as recited in claim 1.

Instead, Perkins discloses a method of fabricating a multichip module (MCM) in which a flexible substrate 2 based on a stiffener 40 and overlaid by circuit layers 4, 6 and a first dielectric layer 8. In particular, Perkins teaches a circuit layer 12 and the second dielectric layer 14 attached to the first dielectric layer 8. The first dielectric layer 8 is penetrated by vias 10 filled with conductive material 11 that connect the circuit layers 6 and 12 together. See col. 4, lines 3-21, 33-50, col. 6, lines 31-49, col. 7, lines 20-23 and Fig. 8 of Perkins. As admitted in the Final Office Action, Perkins fails to teach that the first and second substrates are disposed to overlap with each other, but not to be in contact with each other.

Ozaki does not compensate for the deficiencies of Perkins. Instead, Ozaki discloses a method of manufacturing printed circuit boards by gluing together a metal board 10 and a resin board 20. In particular, Ozaki teaches providing a metal material 18 for the metal board 10 having holes 12 and with a prepreg layer 40 attached, which also fills the holes 12. Lead wire holes 16 are provided in the center of the filled holes 12, and an adhesive sheet 50 is attached to the prepreg 40. The metal board 10 is adhered to the resin board 20 by the adhesive sheet 50. See col. 3, lines 11-35 and Figs. 1(a) - 1(h) of Ozaki. Also, Ozaki provides a resin material 26 for the resin board 20 having circuit layers 22 and through holes 24. See col. 3, lines 36-46 and Figs. 2(a) - 2(c) of Ozaki.

In contrast, Applicant's claims are directed to disposing first and second substrates, having first and second interconnect patterns respectively. By gluing metal and resin boards

together, Ozaki precludes the option of interconnect patterns on the conductive metal board, and therefore teaches away from Applicant's claimed features.

Further, there is no motivation to combine features related to MCM fabrication method of Perkins with method to join metal and resin boards of Ozaki, nor has the Final Office Action established sufficient motivation or a *prima facie* case of obviousness. Instead, the person of ordinary skill in the art would reject such combination as unworkable, due to the stacking of dielectric layers with via-connected circuits in Perkins being incompatible with the joining of metal and resin boards with hole-filling adhesive in Ozaki. Even assuming that such motivation was established, the combination of their teachings does not disclose or suggest all Applicant's claimed features.

A *prima facie* case of obviousness for a §103 rejection requires satisfaction of three basic criteria: there must be some suggestion or motivation either in the references or knowledge generally available to modify the references or combine reference teachings, a reasonable expectation of success, and the references must teach or suggest all the claim limitations. See MPEP §706.02(j). The Final Office Action fails to render obvious Applicant's claimed features by the teachings of the applied references, separately or in combination. Therefore, Applicant's claims are patentable over Perkins and Ozaki.

For at least these reasons, Applicant respectfully asserts that the elected independent claim is now patentable over the applied references. The dependent claims are likewise patentable over the applied references for at least the reasons discussed as well as for the additional features they recite. Consequently, all the claims are in condition for allowance. Thus, Applicant respectfully requests that the rejection under 35 U.S.C. §103 be withdrawn.

VI. Conclusion

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



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